

* NOTICES *

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CLAIMS

[Claim(s)]

[Claim 1] In a nonaqueous electrolyte secondary battery provided with a separator which consists of a cathode, an anode, nonaqueous electrolyte that dissolved electrolyte salt in a nonaqueous solvent, and porosity polyolefine, At the time of overcharge abuse, polymerize in cell voltage exceeding peak operating voltage, and it becomes polymer, If voltage furthermore becomes high, said a part of polymer will oxidize, and it has positive charge, And a conductive polymer is generated when negative ion in said nonaqueous electrolyte is doped by positive charge part, An aromatic additive which has the operation which generates an internal short circuit is mixed by nonaqueous electrolyte, and said separator, a hole of per an unit area (square micrometer) calculated using the value tau which calculated the rate tau of a curved road and was further calculated from using the electrical resistance Rm measured using an alternating-current-resistance measuring method (several 1) (several 2) -- a nonaqueous electrolyte secondary battery, wherein a number (n/S) is 100 or less.

[Mathematical formula 1]

$$\tau = \sqrt{\frac{S \cdot \epsilon \cdot R_m}{\rho \cdot L}}$$

(However, a void content and L in which a measuring-plane product of a separator calculated S and rho calculated specific resistance of a measurement electrolysis solution and epsilon from volume and weight of a separator are the thickness of a separator.)

[Mathematical formula 2]

$$\frac{n}{S} = \frac{\epsilon}{\pi \left(\frac{d}{2} \right)^2 \cdot \tau}$$

(However, it is the average pore size which measured a void content and pi which calculated epsilon from volume and weight of a separator by a circular constant, and measured d by a mercury-porosimetry method.)

[Claim 2] The nonaqueous electrolyte secondary battery according to claim 1, wherein said aromatic additive is at least one chosen from diphenyl ether, phenylcyclohexane, terphenyl, biphenyl, a franc, a thiophene,

and a group that consists of these derivatives.

[Claim 3]Said aromatic additive Diphenyl ether, phenylcyclohexane, The nonaqueous electrolyte secondary battery according to claim 1 or 2 which is chosen from a group which consists of o-terphenyl, biphenyl, a franc, Indore, and a 3-chlorothiophene at least one, and is characterized by the number of holes of an unit area hit of said separator being 50 or less.

[Claim 4]The nonaqueous electrolyte secondary battery according to claim 1 whose infiltration resistivity specified by JIS P8117-1998 of said separator is 450 or less seconds/100 ml.

[Claim 5]The nonaqueous electrolyte secondary battery according to claim 1 whose average pore size of said separator is 0.06 micrometers or more.

[Claim 6]The nonaqueous electrolyte secondary battery according to claim 1 whose void content of said separator is not less than 30%.

[Claim 7]The nonaqueous electrolyte secondary battery according to claim 1 whose thickness of said separator is 8 micrometers to 30 micrometers.

[Translation done.]